

Loeb's conception that the sexual instinct, in all its manifestations, can be explained in terms of tropistic reactions to chemical stimuli is confirmed by the observations of Heape, Marshall, and others on the rutting, or "heat" of animals. This is preceded by a genital congestion of blood, causing a turbulence of the sex organs which is called forth by sex hormones. This is proven by the fact that when they are injected into an animal at any time of the month or year, the same phenomena of rutting follow. It has also been shown that chemical stimuli derived from food can produce similar effects, for when animals are domesticated and artificially fed, it is known that the frequency of rutting periods increases. This is well known to breeders, who, by overfeeding (technically known as "flushing"), are able to cause more frequent sexual activity and increase the fertility of animals. The heightened sexual activity of animals under such conditions is clearly not a product of natural instinct but is a chemotropism produced by food stimulation on top of normal hormone stimulation.

The French biochemist, Jacques Fischer, in his work previously referred to, has applied Loeb's concept of chemotropism to the general phenomena of human sexuality and sexual behavior, as determined by chemical stimulation rather than by instinct or the hypothetical "sexual libido" of Freud.

Fischer believes that the origin of erotic phenomena consists in certain chemicals in the blood, such as hormones, toxins, and metabolic end-products, whose action on various brain centers, erogenous nerve centers, and glands result in the typical physiological and psychological manifestations of human sexuality. Fischer believes that the erotic crisis may be compared to an asthmatic attack since both may be evoked by the action of toxins in the blood, such as uric acid, upon certain nerve centers. He attributes the asthmatic attack to a flocculation of uric acid in the capillaries of the lungs, the seizure being brought on by the action of this uric acid on the bulbar nucleus of the pneumogastric nerve, which often comes about a few hours after a meal, when the blood contains the most uric acid, derived principally from such foods as meat and other animal proteins.

The erotic crisis, according to Fischer, is due to a similar chemical causation: first a rise in the concentration of uric acid in the blood (augmented by uric-acid-producing foods and drinks, as animal proteins, coffee, etc.), and then the irritation of the sexual nerve centers by the toxic blood that results when these foods are metabolized. In support of this view it is interesting to note that all foods that contain or form large quantities of uric acid are known to have marked aphrodisiacal properties. Chief among them are oysters, caviar, and other seafoods, meat, fowl, coffee, tea, beer, etc.

"As in the case of asthma," writes Fischer, "erotic impulses are often found in definite relation to alimentary intoxication (excess of feeding)." He then goes on to show that the actions of the resulting metabolic toxins on various cerebral and spinal nerve centers (and on the mucous lining of the prostatic urethra, which is the seat of sexual sensibility in man), can result in psychological and physical sexual manifestations. Fischer adds: "Irritation of these well-defined bulbar cerebral nuclei will serve to explain the muscular manifestations of the sex impulse, as well as the organic conception of emotional phenomena accompanying it. We see that this whole set of actions making up an attack of erotomania is easily explained by the irritation of certain cerebral zones by the modified blood."